MITSUBISHI ELECTRIC

CE

Mitsubishi Electric Air Conditioner Network System

AI controller

PAC-YG63MCA

Installation/Instruction Manual

Contents

Page

1. Safety Precautions 1
2. Device Capabilities 1
3. Confirmation of Parts 2
4. Specifications 2
   - 4-1. Product Specifications 2
   - 4-2. External View 2
5. Example of System Configuration 3
6. Installation Method 3
   - 6-1. Parts to be Procured Locally 3
   - 6-2. Installation Procedure 4
7. Wiring Method 5
   - 7-1. Names of Parts 5
   - 7-2. Connecting the Power Line and M-NET Transmission Line 6
   - 7-3. Connecting the Sensors 6
     - (1) Channel 1 Pt100 Input 6
     - (2) Channel 1 (Channel 2) Analog Input 7
   - 7-4. Connecting Upper/Lower Limit Alarm Outputs 7
8. Initial Setting Procedure 8
9. Switch List 10
10. Display Content 11
    - 10-1. Display Content List 11
    - 10-2. Error Status Display 11
11. Test Run 12

Before using the AI controller, please read this installation/instruction manual carefully to ensure proper operation.
Keep this installation/instruction manual for future reference.

1 Safety Precautions

- Before using the device, thoroughly read the following safety precautions and use as directed.
- Hazards and levels of danger that can occur due to incorrect handling are classified by the following symbols.

⚠ Warning	Incorrect handling can result in death, serious injury, etc.
⚠ Caution	Incorrect handling can result in injury or damage to the building or its contents.

- After reading this manual, keep this manual for future reference. When the device is reinstalled or repaired, give this manual to those who provide these services. When the user changes, make sure that the new user receives this manual.

⚠ WARNING

Ask your dealer or a qualified technician to install the device.
Improper installation by the user may result in electric shock or fire.

Properly install the device on a surface that can withstand the weight of the device.
Device installed on an unstable surface may fall and cause injury.

Only use specified cables. Securely connect each cable so that the terminals do not carry the weight of the cable.
Improperly connected or fixed cables or short-circuited cables may produce heat and/or result in fire.

Do not make any modifications or alternations to the device.
Modifications or improper repair may result in electric shock or fire. Consult your dealer for repair.

Properly install the device according to the instructions in this manual.
Improper installation may result in electric shock or fire.

Have all electrical work performed by an authorized electrician according to the local regulations and instructions in this manual.
Power supply circuit capacity shortage or improper installation may result in electric shock or fire. Ask your dealer or a specialist when performing an electrical work.

Do not move or reinstall the device by yourself.
Improper installation may result in electric shock or fire. Consult your dealer or a specialist when moving or reinstalling the device.

⚠ CAUTION

Do not install the device where a flammable gas leak may occur.
If a flammable gas leaks and piles up around the device, it may be ignited and/or explode.

Do not use the device in an unusual environment.
If the device is installed where a large amount of oil (including machine oil), steam or sulfidizing gas is present, this environment may lead the device to a remarkable drop in performance or damage its parts.

Do not install the device where a large amount of steam rises, such as in the bathroom or kitchen.
Avoid installing this device where dew condensation occurs. If the device is installed in such places, it may result in electric shock or malfunctions.

Do not install the device where acidic or alkaline solutions or chemical sprays are used frequently.
Doing so may lead to electric shock or malfunctions.

When installing the device in a hospital, communication station, or similar place, provide sufficient protection against noise.
An inverter equipment, private power generator, high-frequency medical equipment or radio communication equipment may interfere with the normal operation of this device. On the other hand, the device may affect such equipment by creating noise that disturbs medical treatment or image broadcasting.

Do not put tension on the power supply wires.
If tension is put on the wires, they may break and result in excessive heat and/or fire.

Do not immerse the device in water.
Doing so may lead to electric shock or malfunctions.

Do not install the device where the temperature may become more than 40°C [104°F] or less than 0°C [32°F] or it will be subjected to direct sunlight.
If the device is installed in such place, it may result in deformation or malfunctions.

Use standard products with the proper current capacity.
The use of non-standard wires may result in current leak, excessive heat, and/or fire.

Do not touch the main board with hands or tools. Prevent dust from forming on the board.
Doing so may result in fire or malfunctions.

Do not apply an AC power source. The maximum applied voltage for the device is 24 VDC.
Using the incorrect voltage may result in device failure, ignition, and/or fire.

2 Device Capabilities

This device is capable of measuring the temperature and humidity.

Trend displays of measurement data can be shown on the G(B)-50A Web Browser and TG-2000A.

Furthermore, an alarm can be output if measurement data exceeds a preset upper or lower limit.

In addition to the above, this device also features an interlock function that interlocks M-NET devices for indoor units, etc. set in advance and performs settings such as temperature control and operation/stoppage using measurement data values.

⚠ Caution: Usage Restrictions

- We take no responsibility for compensation for damages caused by reasons not attributable to us, for opportunities lost as a result of a failure of this device or an electrical power failure on the customer or any third party site, for damages caused by special circumstances, regardless of whether we can predict them or not, for secondary damages, for accidental damages, or for damages to objects other than this device.
  We also take no responsibility for compensation for damages caused by the customer's work, including, but not limited to, replacement work, readjustment of machinery and equipment on the local site, and startup and trial operation.
- Do not use this device for disaster prevention control and security control.
  (In particular, do not use this device in life critical applications.)

3 Confirmation of Parts

• Confirm that the box contains the following parts.

Number	Part Name	Quantity
1	AI controller	1
2	Installation/instruction manual (this document)	1

* In addition to the parts mentioned above, other parts need to be procured locally in order to operate this device. Furthermore, other Mitsubishi optional parts may be required depending on how the device is to be used.
For details, refer to "6 Installation Method".

4 Specifications

4-1. Product Specifications

Item	Description						
Power Supply	24 VDC±10%: 5 W						Screw terminal block (M3)
Interface	M-NET communication			17 to 30 VDC (*1)			Screw terminal block (M3)
	Input (*2)	Ch	Sensor	Measurement target	Measurement range	Measurement error	External connection method
		Ch1	Pt100 (3-wire system)	Temperature	-30 to 60°C [-22 to 140°F]	±0.3%FS ±0.1°C (0.18°F) (*3) [at 25°C (77°F)]	Screwless terminal block (3 poles)
		Ch1	Analog: 4 to 20 mADC / 1 to 5 VDC / 0 to 10 VDC	Temperature/ humidity	(Set by system controller)	±0.5%FS ±0.1°C (0.18°F) (*3) ±0.5%FS ±0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
		Ch2	Analog: 4 to 20 mADC / 1 to 5 VDC / 0 to 10 VDC	Temperature/ humidity	(Set by system controller)	±0.5%FS ±0.1°C (0.18°F) (*3) ±0.5%FS ±0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
	Output	Upper/lower limit alarm output (non-voltage contact)		Applied load MAX: 24 VDC, 5 W MIN: 5 VDC, 2 mW * AC loads cannot be connected.			Screw terminal block (M3.5)
Interlock Function	Interlock M-NET devices according to measurement data values. (*4)						
Environment Conditions	Temperature			Operating temperature range	0 to 40°C [32°F to 104°F]		
				Storage temperature range	-20 to 60°C [-4°F to 140°F]		
	Humidity			30 to 90%RH (no condensation)			
Dimensions	200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 1 25/32 (D) in						
Weight	0.6 kg / 1 3/8 lb						
Current Time Power Failure Backup	If the power is cut, an internal capacitor will normally keep counting the current time for approximately one week. (The internal capacitor takes approximately a day to charge. Replacement of a battery is not necessary.)						
Installation Environment	Inside a control panel (indoors) * Use this product in a hotel, a business office environment or similar environment.						

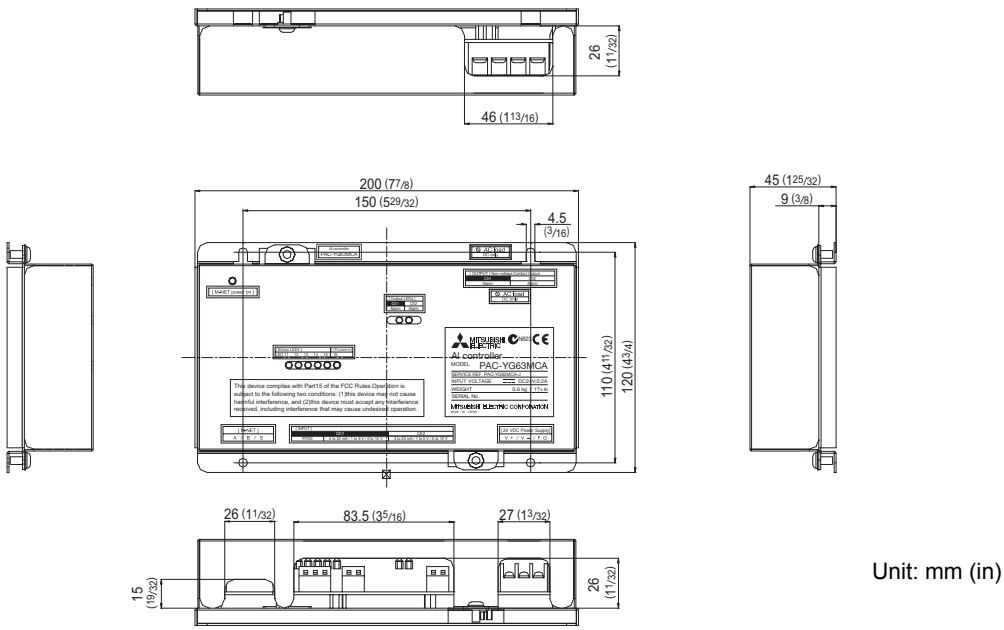
*1: Supply electric power from a power supply unit for the transmission line or an outdoor unit. Furthermore, the power consumption factor of the M-NET circuitry of this unit is "1/4" (equivalent to one ME Remote Controller).

*2: Configure the dip switch settings for the analog input method to use while referring to "9 Switch List".

*3: The measurement error for the system includes the measurement error for this unit, sensor, and wiring.

*4: Settings for the interlock function are performed from the maintenance tool. For details, refer to the instruction manual for the Maintenance Tool.

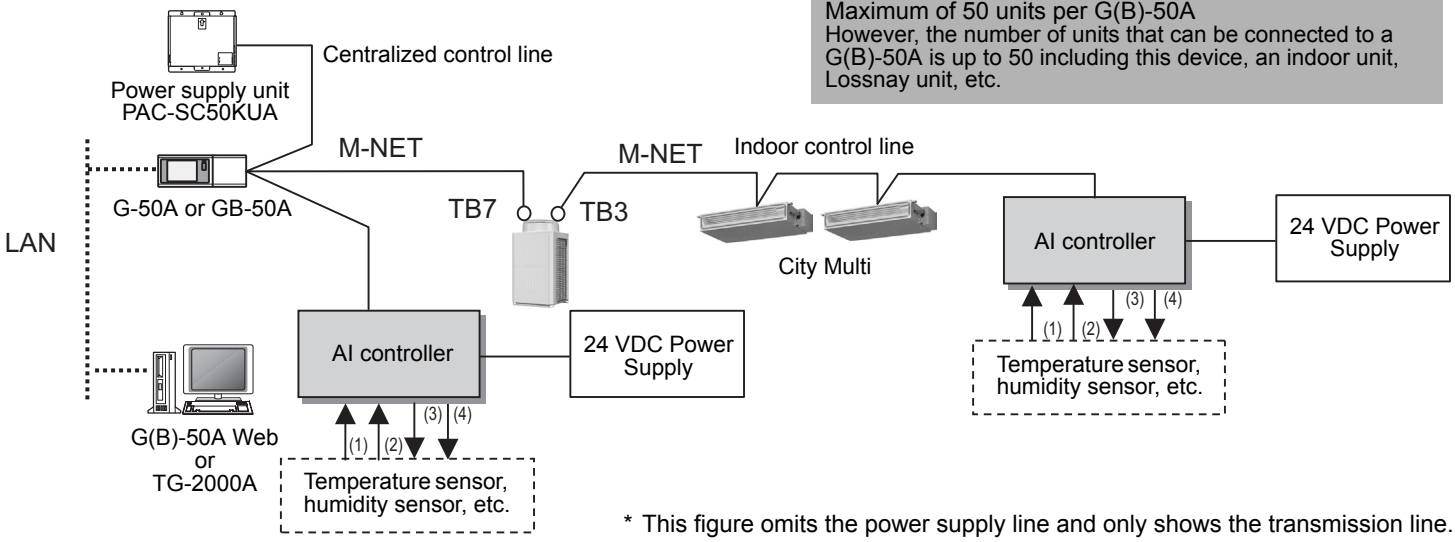
4-2. External View



Unit: mm (in)

5 Example of System Configuration

(1) Channel 1 temperature or humidity sensor input
(2) Channel 2 temperature or humidity sensor input
(3) Channel 1 upper/lower limit alarm output
(4) Channel 2 upper/lower limit alarm output
<Restrictions>
Maximum of 50 units per G(B)-50A
However, the number of units that can be connected to a G(B)-50A is up to 50 including this device, an indoor unit, Lossnay unit, etc.



* This figure omits the power supply line and only shows the transmission line.

Note: For the shield ground of the M-NET centralized control line, use single-point grounding at the power unit for the transmission line. However, when supplying electric power to the transmission line for central control from the R410A series outdoor unit without using a power supply unit for the transmission line, use single-point grounding at the TB7 of that outdoor unit.
Furthermore, when connecting this device to the M-NET indoor control line, use grounding at the TB3 for each outdoor unit system.
If this device is connected to an indoor/outdoor transmission line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the AI controller cannot be set and monitored from the system controller.

6 Installation Method

6-1. Parts to be Procured Locally

Prepare the following parts to install this device.

Required Part	Specification
Unit fixing screws	M4 screw × 4
Power supply for this unit	Power source: 24 VDC±10% 0.2 A (Minimum loading), SELV circuit, power line with grounding terminal Ripple noise: Lower than 200 mVp-p Compatible specification Authorized or CE marked products. Subject to regulations: - IEC60950 (or EN60950) - CISPR22/24 (or EN55022/24) - IEC61000-3-2/3-3 (or EN61000-3-2/3-3)
Power supply for sensors	A separate power supply for sensors may be required. In the case of 24 VDC voltage, the capacity of the power supply for this unit can be increased so that the power supply can be shared.
Power line	Use a sheathed vinyl cord or cable. At least 0.75 mm² (AWG18)
M-NET transmission line	Type of the cable: Sheathed vinyl cords or cable which comply with the following specifications or equivalent. • CPEV Φ1.2 mm to Φ1.6 mm • CVVS 1.25 mm² to 2 mm² (AWG 16 to 14) * CPEV: PE insulated PVC jacketed shielded communication cable * CVVS: PVC insulated PVC jacketed shielded control cable PE: Polyethylene PVC: Polyvinyl chloride Power needs to be supplied to the M-NET circuitry of this device. Use an outdoor unit or a separately purchased power supply unit for the transmission line.
Signal lines (Sensor input lines)	Shows the size of the electric wire (copper wire) that is adapted to the terminal block of this device. Refer to the usage and cautionary items of the sensor when performing settings. However, use a line with shielded line. Electric wire size ···· (1) Solid wire: Φ0.65 mm (AWG21) - Φ1.2 mm (AWG16) (2) Stranded wire: 0.75 mm² (AWG18) - 1.25 mm² (AWG16) Single strand: At least Φ0.18 mm

[Parts to be Purchased Separately]

Name	Model	Application	Remark
Power supply unit	PAC-SC50KUA	Power supply to the M-NET transmission line	This is not required when power is to be supplied from an outdoor unit.

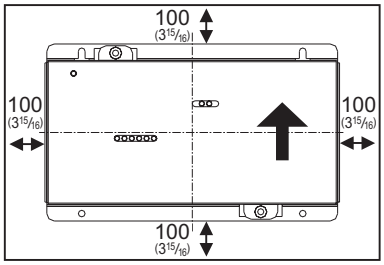
6-2. Installation Procedure

The AI controller PAC-YG63MCA does not have a waterproof structure.

Be sure to install the AI controller inside a control panel that is located indoors.

Prepare a control panel capable of storing this device such as the one shown in the figure. (Install the device in a control panel strong enough to withstand a weight of 0.6 kg [1 3/8 lb].)

This device can be installed flat or vertically. Clear the space shown below when installing.

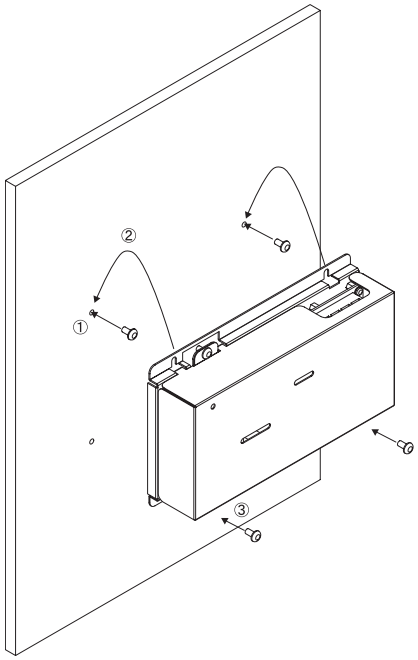


Size of the device: 200 (W) × 120 (H) × 45 (D) mm/
7 7/8 (W) × 4 3/4 (H) × 1 25/32 (D) in

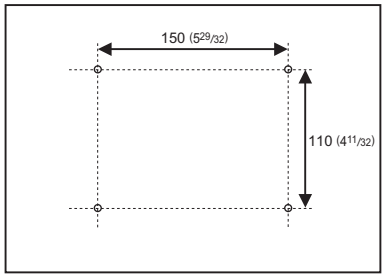
Unit: mm (in)

Note: The space shown above does not include space for peripherals. Additionally, the amount of space necessary varies according to the functions that are used and the wiring method. Secure enough space appropriate for the type of installation.

(1) Fix the top of this unit to the control panel at two points by loosely tightening the screws (M4) that were procured locally. Fix the bottom in place with two screws and then tighten all four of the screws.

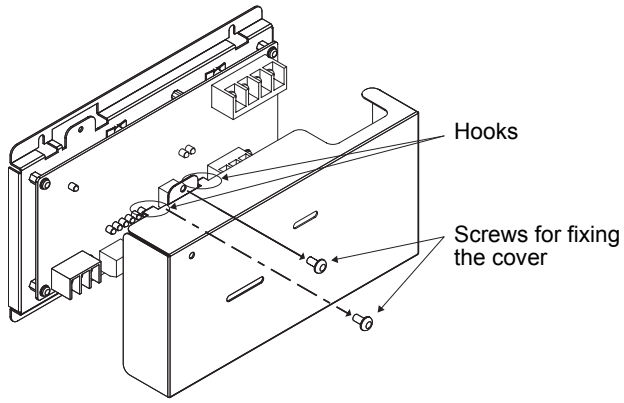


Screw pitch



Unit: mm (in)

(2) To remove the cover, as shown in the figure, remove the two screws for fixing the cover in place and then remove the cover by unhooking the upper hook section from the lower case. To attach the cover, hook the upper hook section on the lower case and then fix the cover in place with the two screws that were removed.



Note: Two hooks are located on the upper section of the cover.

(3) Refer to "7. Wiring Method" and connect the wires for the power line, M-NET transmission line, and input/output signal lines.

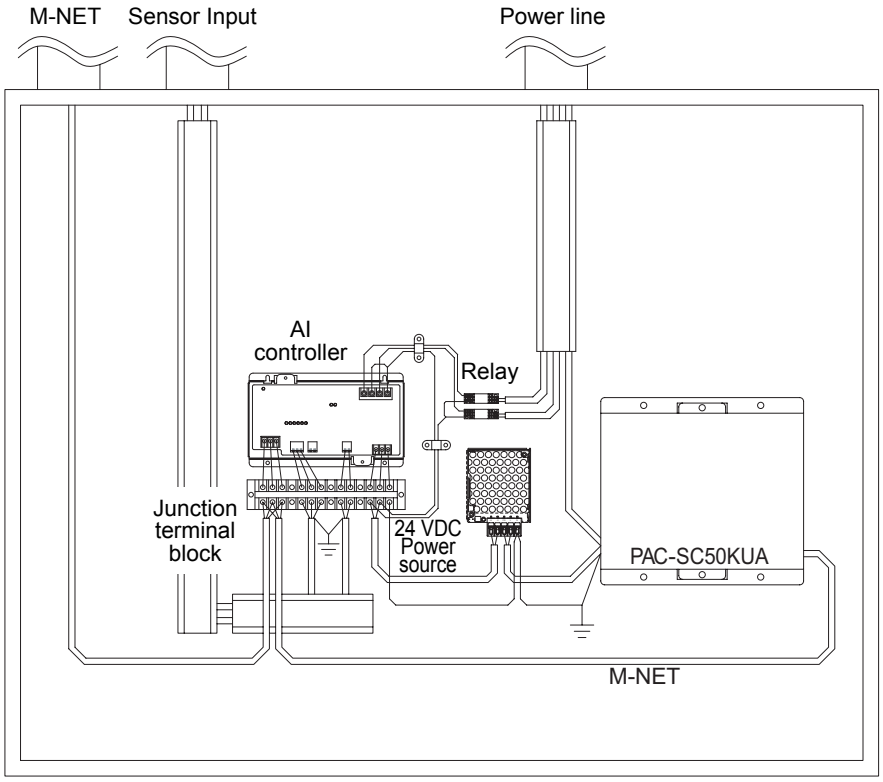


Diagram Image (Installed within a Control Panel)

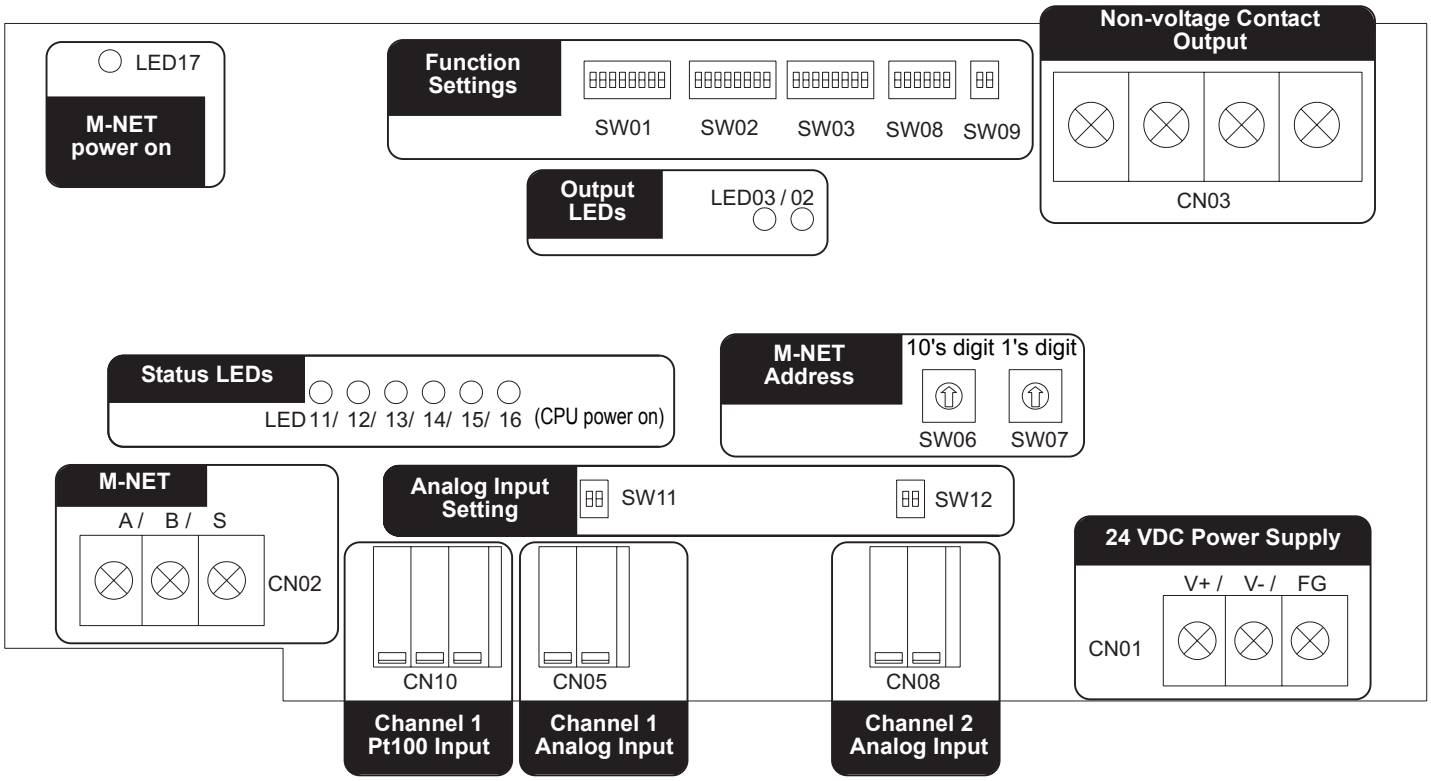
Note:
- Do not install the sensor input line parallel to or near the M-NET or power line. Also avoid loop wiring.
- Be sure to ground this device, PAC-SC50KUA and 24 VDC Power source. Measurement accuracy may be affected if devices are not grounded.

⚠ Caution:
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.
- Do not connect the wires directly from the top of the control panel to the terminal block.
  Moisture may enter this device along the wiring and cause electric shock or fire.

* The wiring in the diagram has been simplified.

7 Wiring Method

7-1. Names of Parts



7-2. Connecting the Power Line and M-NET Transmission Line

Tightening torque for terminal screws: 1 N·m

Connect the device to a power supply unit (PAC-SC50KUA) for the transmission line or an outdoor unit (either a centralized control line or indoor control line can be connected).

* Only the M-NET circuitry of this device receives the power from the M-NET transmission line. The power consumption factor is "1/4" (equivalent to one ME Remote Controller).

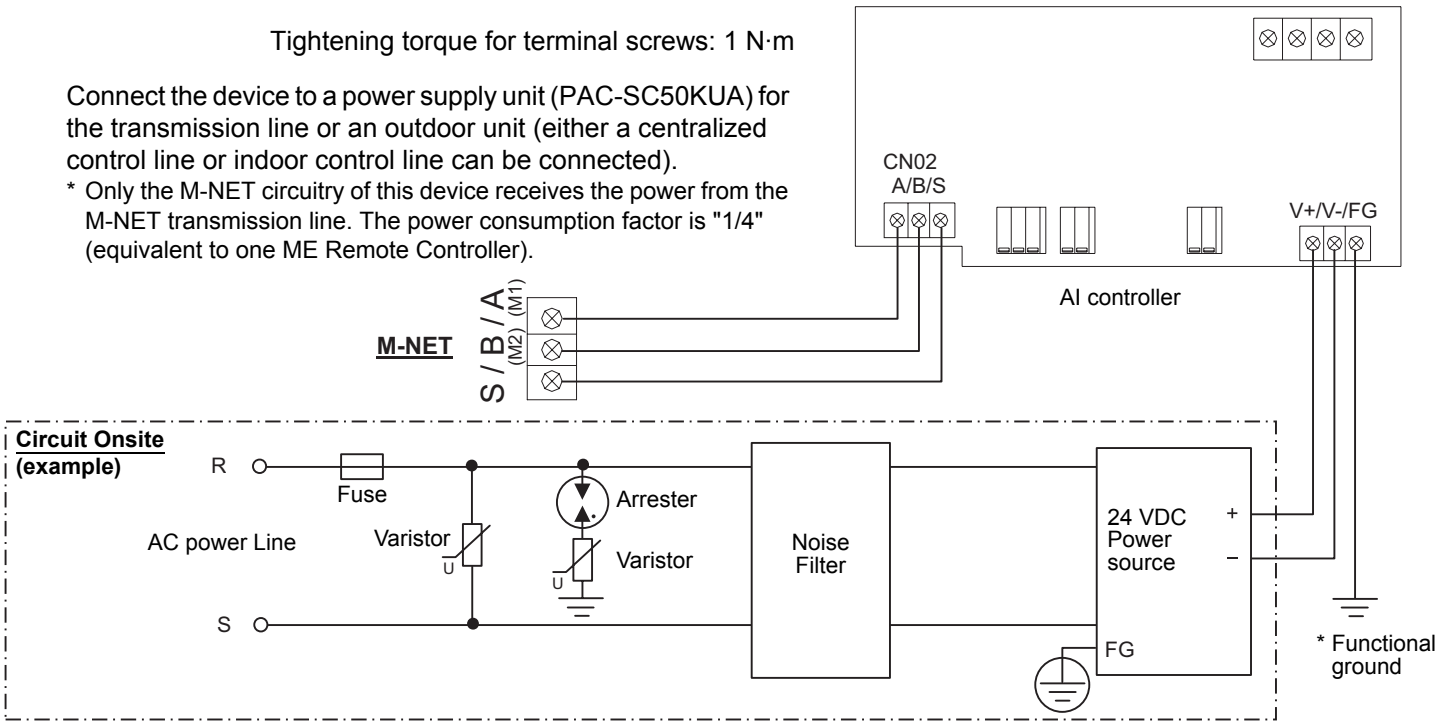


Figure 7-1 Example of Connecting the Power Line and M-NET Transmission Line

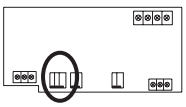
⚠ Caution:
- Use a power line and M-NET transmission line that satisfy the specifications described in "6-1. Parts to Procured Locally".
- Attach a circuit comprising the following components to the supply primary side of the 24 VDC power supply.
  (1) Varistor, (2) Arrester, (3) Noise filter, (4) Fuse
- It is important to pay attention to the polarity when connecting to the 24 VDC power supply terminal block.
  Connecting the positive and negative in the reverse order will cause a failure.
- Fix the power line and M-NET transmission line in place on the outside to ensure that the terminal block is not affected by any external force.
  Not securely connecting and fixing the wires in place may cause heat generation and fire.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
  Cover the shielded line of the M-NET transmission line with materials such as vinyl tape and prevent short-circuiting with the plates.

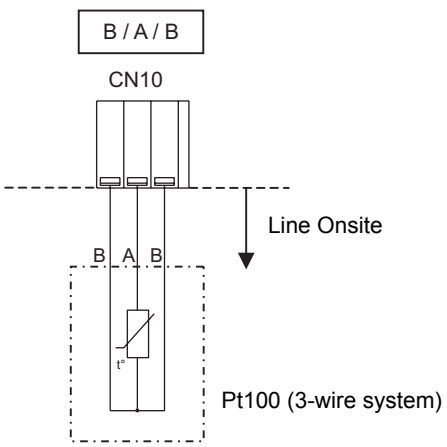
Note:
- If this device is connected to an indoor/outdoor transmission line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the AI controller cannot be set and monitored from the system controller.
- Be sure to ground this device, PAC-SC50KUA and 24 VDC Power source.
  Measurement accuracy may be affected if devices are not grounded.

7-3. Connecting the Sensors

- For channel 1, select one of the following four types: Pt100 detection, 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.
- For channel 2, select one of the following three types: 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.
- The wire length depends on the specifications of the sensor. However, since the use of long wires makes the device susceptible to noise, using wires shorter than 12 m is recommended. Use a shielded line for the sensor line and connect to the FG terminal on this unit or the FG terminal on the control panel.

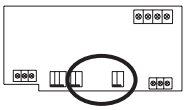
(1) Channel 1 Pt100 Input
To use these, various settings need to be configured. Refer to "8 Initial Setting Procedure".



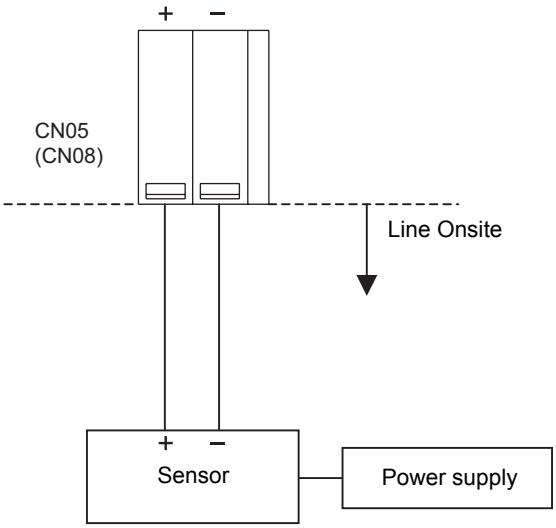


⚠ Caution:
- Use a 3-wire system for Pt100.
- A/B polarity is important for Pt100.
  Be sure to match the polarity when using Pt100.
- Do not install the sensor input line parallel to or near the M-NET or power line. Also avoid loop wiring.
  Furthermore, confirm the precautions for the sensor.
- Strip 12±1 mm (15/32 ±1/32 in) of the wire coating and insert firmly into the terminal.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

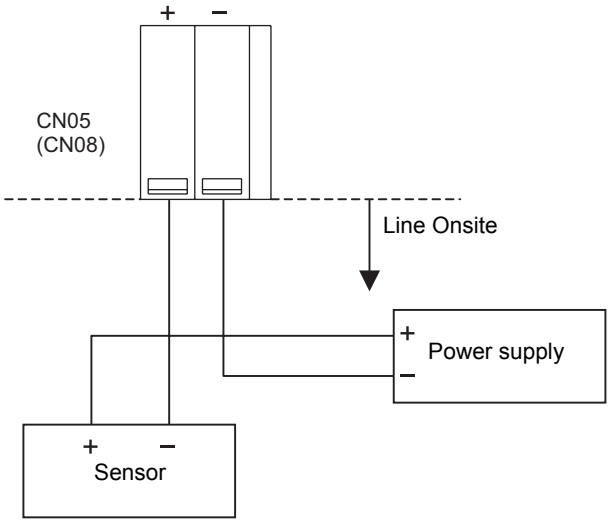
(2) Channel 1 (Channel 2) Analog Input (4 to 20 mADC, 1 to 5 VDC, 0 to 10 VDC)
To use these, various settings need to be configured.
Refer to "8 Initial Setting Procedure".



(a) When 1 to 5 VDC, 0 to 10 VDC, or 4 to 20 mADC (type for which power is supplied to the sensor) is connected



(b) When 4 to 20 mADC (type for which power is supplied to the signal line) is connected

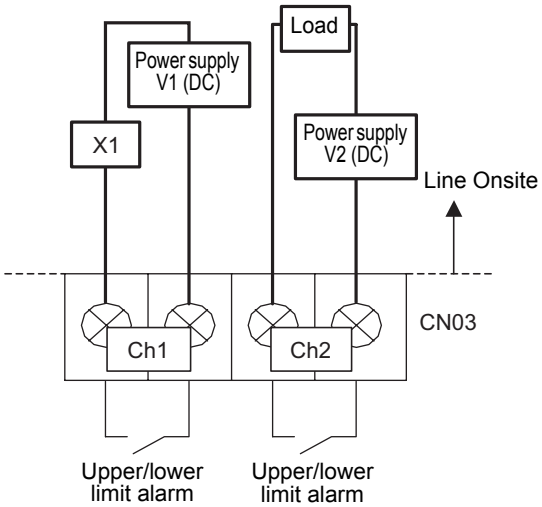


⚠ Caution:
- Select a power supply that is suitable for the sensor to be used.
- Do not install the sensor input line parallel to or near the M-NET or power line. Also avoid loop wiring. Furthermore, confirm the precautions for the sensor.
- Strip 12±1 mm (15/32 ±1/32 in) of the wire coating and insert firmly into the terminal.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained. If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

7-4. Connecting Upper/Lower Limit Alarm Outputs (Non-voltage Contacts)

The maximum wire length is 100 m. However, since the use of long wires makes the device susceptible to noise, using wires no more than 10 m long is recommended.

To use these, various settings need to be configured. Refer to "8 Initial Setting Procedure".



Tightening torque for terminal screws: 1 N·m.

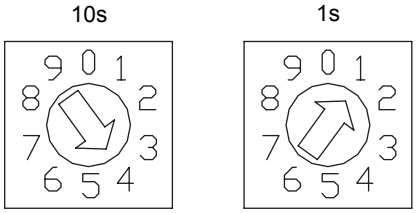
* The contact of the internal relay is always ON during detection of an upper/lower limit alarm. (Level output)

⚠ Caution:
- To use X1 relay, obtain one that satisfies the following specifications.
  Operating coil
  [Applied load]
  MAX: 24 VDC, 5 W (Built-in diode)
  MIN: 5 VDC, 2 mW (Built-in diode)
  *1 AC loads cannot be connected.
  *2 Provide a power supply (V1, V2) that matches the load and relay to be used.
- To drive a direct load, use ones within the following.
  [Applied load]
  MAX: 24 VDC, 5 W
  MIN: 5 VDC, 2 mW
  * AC loads cannot be connected.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained. If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.
- Do not connect the wires directly from the top of the control panel to the terminal block. Moisture may enter this device along the wiring and cause electric shock or fire.

8 Initial Setting Procedure

After completing the procedures described in "6 Installation Method" and "7 Wiring Method", set the initial settings in accordance with the procedure described below.

(1) M-NET address settings



In the case of address "41"

Note:
- An address from 01 to 50 can be set.
- Set an address that is not the same as that of another unit.

The address is set to "01" at factory shipment.

(2) Use the dip switches to select functions.

Select the function required for each input/output channel to be used.

The switch assignment for each channel is shown below. Configure each of the settings while referring to "9 Switch List".

- For channel 1, select one of the following four types: Pt100 detection, 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.
- For channel 2, select one of the following three types: 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.

(a) When using Pt100 detection (only channel 1 can be used)

Ch	Setting	Setting Switch	Pt100	To not use
Ch1	Pt100 used	(1) SW01-1 (2) SW01-3	ON ON	OFF OFF

(b) When using one of the analog inputs (4 to 20 mADC detection, 1 to 5 VDC detection, and 0 to 10 VDC detection)

Ch	Setting	Setting Switch	4 to 20 mADC	1 to 5 VDC	0 to 10 VDC	To not use
Ch1	Setting of sensor to use	(1) SW11-1 (2) SW11-2 (3) SW01-1 (4) SW01-2 (5) SW01-3	ON ON ON OFF OFF	OFF ON ON OFF OFF	OFF OFF ON ON OFF	OFF OFF OFF OFF OFF
Ch2	Setting of sensor to use	(1) SW12-1 (2) SW12-2 (3) SW02-1 (4) SW02-2	ON ON ON OFF	OFF ON ON OFF	OFF OFF ON ON	OFF OFF OFF OFF

(c) When using upper/lower limit alarm interlock output

Ch	Setting	Setting Switch	To use	To not use
Ch1	Set this device to determine the warning level and output an alarm from the contact output.	(1) SW01-5 (2) SW01-6	ON OFF	OFF OFF
	Set the system controller to determine the warning level and output an alarm from the contact output.	(1) SW01-5 (2) SW01-6	ON ON	OFF OFF
Ch2	Set this device to determine the warning level and output an alarm from the contact output.	(1) SW02-5 (2) SW02-6	ON OFF	OFF OFF
	Set the system controller to determine the warning level and output an alarm from the contact output.	(1) SW02-5 (2) SW02-6	ON ON	OFF OFF

(d) Measurement data backup interval setting (for servicing)

Ch	Setting	Setting Switch	1 min	2 min	5 min	10 min
Common	Measurement data backup interval setting	(1) SW03-1 (2) SW03-2	OFF OFF	OFF ON	ON OFF	ON ON

(3) Turn on the power of this device.

Verify that the LED16 (CPU power on) and LED17 (M-NET power on) are lit.

(4) Set the time.

Set the current time from a system controller (G(B)-50A, TG-2000A) or a Maintenance Tool.

(5) Configure the settings of the system controller (G(B)-50A or TG-2000A).

Configure settings for the system controller (G(B)-50A or TG-2000A) such as the type of sensor to use and the measurement range. The main items that should be set are shown below.

(a) When using Pt100 detection (only channel 1 can be used)

Ch	Setting	Setting with G(B)-50A or TG-2000A
Ch1	Measurement category setting	Select temperature/humidity (Be sure to select temperature.)
	Measurement range setting	Set the upper limit and lower limit values (Set a range from -30°C [-22°F] to 60°C [140°F].)
	Measurement correction	Input the measurement temperature correction value (offset value)

(b) When using an analog input (4 to 20 mADC detection, 1 to 5 VDC detection, or 0 to 10VDC detection)

Ch	Setting	Setting with G(B)-50A or TG-2000A
Ch1	Measurement category setting	Select the temperature/humidity
	Measurement range setting	Set the upper limit and lower limit values
	Measurement correction	Input the measurement correction value (offset value)
Ch2	Measurement category setting	Select the temperature/humidity
	Measurement range setting	Set the upper limit and lower limit values
	Measurement correction	Input the measurement correction value (offset value)

(c) When using upper/lower limit alarm interlock output

Ch	Setting	Setting with G(B)-50A or TG-2000A
Ch1	Upper/lower limit alarm detection value and cancellation value settings	Upper/lower limit alarm detection value and cancellation value settings
Ch2	Upper/lower limit alarm detection value and cancellation value settings	Upper/lower limit alarm detection value and cancellation value settings

(6) Settings for the interlock function are performed from the maintenance tool.

Perform settings such as interlock criteria for this device from maintenance tool.
For details, refer to the instruction manual for the maintenance tool.

9 Switch List

SW		Supported Channel	Function	OFF	ON	Remark
SW01	1	Channel 1	Selection of the input to use	No	Yes	Specify whether to use the channel 1 input terminal.
	2		Selection of the analog input type (1)	4 to 20 mADC/ 1 to 5 VDC detection	0 to 10 VDC detection	Set the type of analog input for channel 1 (1). * This should also be set in accordance with the selection of analog input type (2) (SW11-1 and 2). * The setting of SW01-2 is disabled when SW01-3 is ON.
	3			–	Pt100 detection	
	4		Unused			Set to OFF
	5		Selection of upper/lower limit alarm interlock output use	No	Yes	Specify whether to use channel 1 upper/lower limit alarm interlock output.
	6		Selection of the system to judge upper/lower limit alarm interlock output	Self-judgment	System controller	Select whether this device itself or the system controller performs the output judgment of the upper/lower limit alarm interlock.
	7		Unused			Set to OFF
	8		Unused			Set to OFF
SW02	1	Channel 2	Selection of the input to use	No	Yes	Specify whether to use the channel 2 input terminal.
	2		Selection of the analog input type (1)	4 to 20 mADC/ 1 to 5 VDC detection	0 to 10 VDC detection	Set the type of analog input for channel 2 (1). * This should also be set in accordance with the selection of analog input type (2) (SW12-1 and 2).
	3		Unused			Set to OFF
	4		Unused			Set to OFF
	5		Selection of upper/lower limit alarm interlock output use	No	Yes	Specify whether to use channel 2 upper/lower limit alarm interlock output.
	6		Selection of the system to judge upper/lower limit alarm interlock output	Self-judgment	System controller	Select whether this device itself or the system controller performs the output judgment of the upper/lower limit alarm interlock.
	7		Unused			Set to OFF
	8		Unused			Set to OFF
SW03	1	Measurement data backup interval 1-minute interval: (2 hours worth) 2-minute interval: (4 hours worth) 5-minute interval: (10 hours worth) 10-minute interval: (20 hours worth)		SW03-1, OFF OFF ON ON	SW03-2 OFF ON OFF ON	Set to back up measurement data to the fixed memory. Excess past data will be erased.
	2					
	3	Unused				Set to OFF
	4	Unused				Set to OFF
	5	Unused				Set to OFF
	6	Unused				Set to OFF
	7	Unused				Set to OFF
	8	Unused				Set to OFF
SW06		M-NET address		(Address 10s) 0 to 9 (decimal)		An address from 01 to 50 can be set. Set an address that is not the same as that of another unit.
SW07				(Address 1s) 0 to 9 (decimal)		
SW08	1	Unused				Set to OFF
	2	Unused				Set to OFF
	3	Unused				Set to OFF
	4	Unused				Set to OFF
	5	Unused				Set to OFF
	6	Unused				Set to OFF
SW09	1	Unused				Set to OFF
	2	Unused				Set to OFF
SW11	1	Channel 1	Selection of analog input type (2) 0 to 10 VDC detection : 1 to 5 VDC detection : Setting not possible : 4 to 20 mADC detection:	SW11-1, OFF OFF ON ON	SW11-2 OFF ON OFF ON	Set the type of analog input for channel 1 (2) *1: This setting is not necessary when SW01-2 is ON.
	2					
SW12	1	Channel 2	Selection of analog input type (2) 0 to 10 VDC detection : 1 to 5 VDC detection : Setting not possible : 4 to 20 mADC detection:	SW12-1, OFF OFF ON ON	SW12-2 OFF ON OFF ON	Set the type of analog input for channel 2 (2)
	2					

Set the dip switches for function selection according to the system to be used.

At the time of shipment, all dip switches are set to OFF and the M-NET address is set to 01.

10 Display Content

The LEDs of this device indicate the upper/lower limit alarm interlock output status and error status of this device.

10-1.Display Content List

Display Item			Display LED	Content Note ●:On, ○:Off, ☼:Flashing
Power supply status		(1) Power supply to CPU	LED16 (CPU power on)	● : Lights when the CPU is energized. ☼ : Flashes during M-NET communication.
		(2) Power supply to M-NET circuit	LED17 (M-NET power on)	● : Lights when the M-NET is energized.
Output status	Ch1, 2	(1) Upper/lower limit alarm interlock output status	LED03/02 (Output LEDs)	Output Method: Ch1 / LED 03 — Level Output: ●: Alarm output ○: Alarm stop Output Method: Ch2 / LED 02 — Level Output: ●: Alarm output ○: Alarm stop
Error status (*1)		(1) 4-digit error code	LED12/13/14/15 (Status display LEDs)	Refer to "10-2. Error Status Display".

*1: When a sensor error or communication error occurs, the error status is displayed.

10-2.Error Status Display

If a sensor error or communication error occurs, a 4-digit error code will be repeatedly displayed according to the steps shown below.

Error status display consists of the following 10 steps. This operation is performed repeatedly to indicate the 4-digit error code for the error.

Note ●:On, ○:Off, ☼:Flashing

	LED11	LED12	LED13	LED14	LED15	Function	Remark
	Common	Error code display (Binary number indication)					
		2^3=8	2^2=4	2^1=2	2^0=1		
STEP1	○	☼	☼	☼	☼	"Error Status Display" Starting Point Indication	LEDs 12 to 15 flash 3 times
STEP2	○	○	○	○	○	Blank	Turn Off
STEP3	●	●/○	●/○	●/○	●/○	Error code 1000's digit	Error code 1000's digit indication In the case of 6, ○●●○
STEP4	○	○	○	○	○	Blank	Turn Off
STEP5	●	●/○	●/○	●/○	●/○	Error code 100's digit	Error code 100's digit indication In the case of 6, ○●●○
STEP6	○	○	○	○	○	Blank	Turn Off
STEP7	●	●/○	●/○	●/○	●/○	Error code 10's digit	Error code 10's digit indication In the case of 0, ○○○○
STEP8	○	○	○	○	○	Blank	Turn Off
STEP9	●	●/○	●/○	●/○	●/○	Error code 1's digit	Error code 1's digit indication In the case of 7, ○●●●
STEP10	○	○	○	○	○	Blank	Turn Off

The error codes that are displayed for M-NET communication errors are as shown below.

Error Code	Description of Error	Error Code	Description of Error
6600	Multiple address error	6607	No ACK error
6601	M-NET polarity unset error	6608	No return of response frame
6602	Transmission processor hardware error	5010	Sensor trouble in Channel 1
6603	Transmission bus-busy error	5020	Sensor trouble in Channel 2
6606	Communications with transmission processor error		

11 Test Run

Use the following procedure to confirm operation of the system.

(1) Configure the settings of this device and the system controller while referring to "8 Initial Setting Procedure".

(2) Confirm whether the measurement values of channel 1 and channel 2 are displayed on the system controller properly.

* Depending on the conditions, compare the measurement values with those of, for example, a commercially available portable thermohygrometer.
If the measurement accuracy of the sensor used results in extreme differences in the measurement values, use the measurement correction value (offset value) input function of the system controller to correct the measurement values.

(3) When upper/lower limit alarm interlock is to be used, input a value that exceeds the set alarm level and confirm whether the alarm is displayed on the controller. Furthermore, confirm whether the alarm output operation takes place from the contact output at the same time.

If there is a problem, check the wiring and settings.
For details on configuring settings, refer to "8 Initial Setting Procedure" and "9 Switch List".

This product is designed and intended for use in the residential, commercial and light-industrial environment.

This product at hand is based on the following EU regulations:

- Low Voltage Directive 73/23/EEC
- Electromagnetic Compatibility Directive 2004/108/EC

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the use is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on an circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN

WT04975X01